Page 1 of 6



RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/700,708

DATE: 01/31/2002

ENTERED

TIME: 08:46:17

Input Set : A:\US09700708.raw

Output Set: N:\CRF3\01312002\I700708.raw

RECEIVED

APR 1 2 2002

```
1 <110> APPLICANT: ITAI, Akiko
                                                                      Technology Center 2100
        ITAI, Reiko
        TOMIOKA, Nobuo
4 <120> TITLE OF INVENTION: Method For Predicting Functions of Protein
5 <130> FILE REFERENCE: P20294
6 <140> CURRENT APPLICATION NUMBER: US/09/700,708
```

C--> 7 <141> CURRENT FILING DATE: 2001-02-20

8 <150> PRIOR APPLICATION NUMBER: PCT/JP98/02302

9 <151> PRIOR FILING DATE: 1998-05-26

10 <160> NUMBER OF SEQ ID NOS: 6

11 <170> SOFTWARE: PatentIn version 3.0

13 <210> SEQ ID NO: 1 14 <211> LENGTH: 159 15 <212> TYPE: PRT

16 <213> ORGANISM: Escherichia coli

17 <400> SEQUENCE: 1 Met Ile Ser Leu Ile Ala Ala Leu Ala Val Asp Arg Val Ile Gly Met 18 19 10 5 Glu Asn Ala Met Pro Trp Asn Leu Pro Ala Asp Leu Ala Trp Phe Lys 20 25 21 22 Arg Asn Thr Leu Asp Lys Pro Val Ile Met Gly Arg His Thr Trp Glu 23 Ser Ile Gly Arg Pro Leu Pro Gly Arg Lys Asn Ile Ile Leu Ser Ser 2425 Gln Pro Gly Thr Asp Asp Arg Val Thr Trp Val Lys Ser Val Asp Glu 26 27 Ala Ile Ala Ala Cys Gly Asp Val Pro Glu Ile Met Val Ile Gly Gly 29 90 Gly Arg Val Tyr Glu Gln Phe Leu Pro Lys Ala Gln Lys Leu Tyr Leu 30 31 105 32 Thr His Ile Asp Ala Glu Val Glu Gly Asp Thr His Phe Pro Asp Tyr 33 120 Glu Pro Asp Asp Trp Glu Ser Val Phe Ser Glu Phe His Asp Ala Asp 34 135 35 Ala Gln Asn Ser His Ser Tyr Cys Phe Lys Ile Leu Glu Arg Arg 150 37 145 39 <210> SEQ ID NO: 2

Ile Val Gly Gly Tyr Thr Cys Gly Ala Asn Thr Val Pro Tyr Gln Asx

1/31/02

40 <211> LENGTH: 223 41 <212> TYPE: PRT

44 45

42 <213> ORGANISM: Bovine 43 <400> SEQUENCE: 2

RAW SEQUENCE LISTING DATE: 01/31/2002
.PATENT APPLICATION: US/09/700,708 TIME: 08:46:17

Input Set : A:\US09700708.raw

Output Set: N:\CRF3\01312002\I700708.raw

```
Ser Leu Asn Ser Gly Tyr His Phe Cys Gly Gly Ser Leu Ile Asn Ser
46
47
         Gln Trp Val Val Ser Ala Ala His Cys Tyr Lys Ser Gly Ile Gln Val
48
49
                                      40
         Arg Leu Gly Glu Asp Asn Ile Asn Val Asx Glu Gly Asn Glu Gln Phe
50
51
         Ile Ser Ala Ser Lys Ser Ile Val His Pro Ser Tyr Asn Ser Asn Thr
52
53
                             70
                                                  75
         Leu Asn Asn Asp Ile Met Leu Ile Lys Leu Lys Ser Ala Ala Ser Leu
54
55
                         85
                                              90
         Asn Ser Arg Val Ala Ser Ile Ser Leu Pro Thr Ser Cys Ala Ser Ala
56
57
                     100
                                         105
         Gly Thr Gln Cys Leu Ile Ser Gly Trp Gly Met Thr Lys Ser Ser Gly
58
59
                                     120
         Thr Ser Tyr Pro Asp Asx Leu Lys Cys Leu Lys Ala Pro Ile Leu Ser
60
                                 135
61
         Asp Ser Ser Cys Lys Ser Ala Tyr Pro Gly Gln Ile Thr Ser Asn Met
62
63
                             150
         Phe Cys Ala Gly Tyr Leu Glu Gly Gly Lys Asp Ser Cys Gln Gly Asp
64
                                             170
65
                         165
         Cys Gly Gly Pro Val Val Cys Ser Gly Lys Leu Gln Gly Ile Val Ser
66
67
                     180
                                          185
         Trp Gly Ser Gly Cys Ala Gln Lys Asn Lys Pro Gly Val Tyr Thr Lys
68
                                     200
69
         Val Cys Asn Tyr Val Ser Trp Ile Lys Gln Thr Ile Ala Ser Asn
70
                                 215
73 <210> SEQ ID NO: 3
74 <211> LENGTH: 124
75 <212> TYPE: PRT
76 <213> ORGANISM: Bovine
77 <400> SEQUENCE: 3
         Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser Ser
78
79
80
         Thr Ser Ala Ala Ser Ser Ser Asn Tyr Cys Asn Gln Met Met Lys Ser
81
         Arg Asn Leu Thr Lys Asp Arg Cys Lys Pro Val Asn Thr Phe Val His
82
83
         Glu Ser Leu Ala Asp Val Gln Ala Val Cys Ser Gln Lys Asn Val Ala
84
85
                                 55
                                                      60
86
         Cys Lys Asn Gly Gln Thr Asn Cys Tyr Gln Ser Tyr Ser Thr Met Ser
87
         Ile Thr Asp Cys Arg Glu Thr Gly Ser Ser Lys Tyr Pro Asn Cys Ala
88
89
90
         Tyr Lys Thr Thr Gln Ala Asn Lys His Ile Ile Val Ala Cys Glu Gly
91
                                         105
                    100
         Asn Pro Tyr Val Pro Val His Phe Asp Ala Ser Val
                 115
                                     120
95 <210> SEQ ID NO: 4
96 <211> LENGTH: 153
```

RAW SEQUENCE LISTING DATE: 01/31/2002
PATENT APPLICATION: US/09/700,708 TIME: 08:46:17

Input Set : A:\US09700708.raw

Output Set: N:\CRF3\01312002\I700708.raw

```
97 <212> TYPE: PRT
98 <213> ORGANISM: Whale
99 <400> SEQUENCE: 4
          Val Leu Ser Glu Gly Glu Trp Gln Leu Val Leu His Val Trp Ala Lys
101
102
          Val Glu Ala Asp Val Ala Gly His Gly Gln Asp Ile Leu Ile Arg Leu
103
104
          Phe Lys Ser His Pro Glu Thr Leu Glu Lys Phe Asp Arg Phe Lys His
105
106
          Leu Lys Thr Glu Ala Glu Met Lys Ala Ser Glu Asp Leu Lys Lys His
107
                                  55
108
          Gly Val Thr Val Leu Thr Ala Leu Gly Ala Ile Leu Lys Lys Gly
109
                              70
                                                   75
110
          His His Glu Ala Glu Leu Lys Pro Leu Ala Gln Ser His Ala Thr Lys
111
                                               90
112
          His Lys Ile Pro Ile Lys Tyr Leu Glu Phe Ile Ser Glu Ala Ile Ile
113
                      100
                                          105
114
          His Val Leu His Ser Arg His Pro Gly Asp Phe Gly Ala Asp Ala Gln
115
                                      120
                                                           125
116
          Gly Ala Met Asn Lys Ala Leu Glu Leu Phe Arg Lys Asp Ile Ala Ala
117
                                  135
          Lys Tyr Lys Glu Leu Gly Tyr Gln Gly
118
119
          145
121 <210> SEQ ID NO: 5
122 <211> LENGTH: 186
123 <212> TYPE: PRT
124 <213> ORGANISM: Human
125 <400> SEQUENCE: 5
          Val Gly Ser Leu Asn Cys Ile Val Ala Val Ser Gln Asn Met Gly Ile
126
127
                                               10
128
          Gly Lys Asn Gly Asp Leu Pro Trp Pro Pro Leu Arg Asn Glu Phe Arg
129
                      20
                                          25
130
          Tyr Phe Gln Arg Met Thr Thr Ser Ser Val Glu Gly Lys Gln Asn
131
                                      40
132
          Leu Val Ile Met Gly Lys Lys Thr Trp Phe Ser Ile Pro Glu Lys Asn
133
134
          Arg Pro Leu Lys Gly Arg Ile Asn Leu Val Leu Ser Arg Glu Leu Lys
135
136
          Glu Pro Pro Gln Gly Ala His Phe Leu Ser Arg Ser Leu Asp Asp Ala
137
                          85
                                              90
138
          Leu Lys Leu Thr Glu Gln Pro Glu Leu Ala Asn Lys Val Asp Met Val
139
                                          105
140
          Trp Ile Val Gly Gly Ser Ser Val Tyr Lys Glu Ala Met Asn His Pro
141
                                      120
                                                           125
          Gly His Leu Lys Leu Phe Val Thr Arg Ile Met Gln Asp Phe Glu Ser
142
143
                                  135
144
          Asp Thr Phe Phe Pro Glu Ile Asp Leu Glu Lys Tyr Lys Leu Leu Pro
                              150
145
                                                  155
          Glu Tyr Pro Gly Val Leu Ser Asp Val Glu Glu Lys Gly Ile Lys
146
```

RAW SEQUENCE LISTING DATE: 01/31/2002
PATENT APPLICATION: US/09/700,708 TIME: 08:46:17

Input Set : A:\US09700708.raw

Output Set: N:\CRF3\01312002\1700708.raw

147			T	D1-	0 1	165		a 1	-		170					175	
148		Tyr	Lys	Phe		Val	Tyr	G⊥u	Lys		Asp						
149	.040	~			180					185							
		SEQ ID NO: 6															
		LENGTH: 186															
		TYPE: PRT															
		ORGANISM: Escherichia coli															
	<400>	SEQUENCE: 6 Val Gly Ser Leu Ser Leu Ile Ala Ala Leu Ala Gln Asn Met Gly Ile															
156			Gly	Ser	Leu		Leu	Ile	Ala	Ala		Ala	Gln	Asn	Met	4	Ile
157		1				5					10					15	
158		Gly	Lys	Asn	_	Asp	Leu	Pro	\mathtt{Trp}	Pro	Pro	Leu	Pro	Ala	Asp	Leu	Ala
159					20					25					30		
160		Trp	Phe	Lys	Arg	Asn	Thr	Leu	Asp	Lys	Ser	Val	Glu	Gly	Lys	Gln	Asn
161				35					40					45			
162		Leu	Val	Ile	Met	Gly	Arg	His	Thr	Trp	Glu	ser	Ile	Gly	Arg	Pro	Leu
163			50					55					60				
164		Pro	Gly	Arg	Lys	Gly	Arg	Ile	Asn	Leu	Val	Leu	Ser	Arg	Glu	Leu	Lys
165		65					70					75					80
166		Glu	Pro	Pro	Gln	Gly	Ala	His	Phe	Leu	Ser	Arg	Ser	Leu	Asp	Asp	Ala
167						85					90					95	
168		Leu	Lys	Leu	Thr	${\tt Glu}$	Gln	Pro	Glu	Leu	Ala	Asn	Lys	Val	Asp	Met	Val
169					100					105					110		
170		Met	Val	Ile	Gly	Gly	Gly	Ser	Val	Tyr	Lys	Glu	Ala	Met	Asn	His	Pro
171				115		_	_		120	_	_			125			
172		Gly	His	Leu	Lys	Leu	Tyr	Leu	Thr	His	Ile	Met	Gln	Asp	Phe	Glu	Ser
173		-	130		-		-	135					140	-			
174		Asp	Thr	Phe	Phe	Pro	Glu	Ile	Asp	Leu	Glu	Lvs	Tvr	Lvs	Leu	Leu	Pro
175		145					150		•			155	-	-			160
176		Glu	Tyr	Pro	Gly	Val	Leu	Ser	Asp	Val	Gln	Glu	Glu	Lys	Glv	Ile	
177		-		-	4	165		•			170			-1-	1	175	-1-2
178		Tvr	Lys	Phe	Glu		Tvr	Glu	Lvs	Asn							
179		- 1	-1-2		180		-1-		-1-1	185	<u>F</u> -						

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/700,708

DATE: 01/31/2002
TIME: 08:46:18

Input Set : A:\US09700708.raw

Output Set: N:\CRF3\01312002\I700708.raw

L:7 M:271 C: Current Filing Date differs, Replaced Current Filing Date